What is claimed is:

1. A method of manufacturing rare earth thick film magnet comprising:

a step forming $R_XB_YTM_Z$ alloy layer of 30 to 100 µm in thickness on a substrate by a physical deposition process; and

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a step of heat-treating said alloy layer to form a thick film magnetic layer having $R_2TM_{14}B$ as main phase,

where R is at least one selected from rare earth elements, B is boron, TM is iron or iron alloy partly substituted by cobalt, and X : 0.1 - 0.2, Y : 0.05 - 0.2 and $Z = 1 - X - Y$.

2. The method of claim 1, further comprising a step of laminating a plurality of said alloy layers formed on said substrate.

3. The method of claim 1, wherein said physical deposition process is a laser abrasion.

4. The method of claim 1, wherein said substrate is made of iron including at least one element selected from the group consisting of nickel, cobalt, silicon, nitrogen, and boron and having at least 13kG in saturated magnetization.

5. The method of claim 4, wherein said substrate includes tantalum on a surface thereof.

6. The method of claim 4, wherein said substrate includes ion-implanted tantalum on a surface thereof.

7. The method of claim 1, wherein a film-formation speed in said forming alloy layer is 50 µm /hr or more.

8. The method of claim 1, wherein a degree of vacuum in said forming

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alloy layer is 10^{-6} Torr or less.

9. The method of claim 1, wherein said alloy layer is heat-treated at 650 - 750 °C, and the coercive force of said rare earth thick film magnet is 6 kOe or more.

10. The method of claim 1, wherein said heat-treating step further comprises a step of applying electric current directly to said alloy layer while said alloy layer being pressed in a direction of thickness.

11. The method of claim 10, wherein a surface of said alloy layer is smoothed by said pressing.

12. The method of claim 2, wherein said heat-treating step further comprises a step of applying electric current directly to said plurality of laminated alloy layers while said plurality of laminated alloy layers being pressing in a direction of thickness.

13. The method of claim 10, wherein said heat-treating is processed at a heating speed of higher than 9 °C/second, at a pressure of 200 - 400 kgf/cm^2, and at a degree of vacuum of 1 Torr or less.

14. The method of claim 10, wherein said heat-treating is processed at a heating speed of higher than 9 °C/second, at a pressure of 200 - 400 kgf/cm^2, and at a degree of vacuum of 1 Torr or less.

15. A motor comprising a rare earth thick film magnet manufactured by the method of any one of claims 1 to 11.

16. The motor of claim 14, wherein a mover and a stator are configured in flat-plate shape.

17. A radial air gap type magnet motor comprising:

a mover comprising a rare earth thick film magnet and a rotary shaft, said rare earth thick film magnet being crystallized by a heat treatment after being fixed to an inner wall of a mover frame by curling; and

a stator opposing to said mover via air gap.

18. A method of manufacturing a motor comprising rare earth thick film magnet comprising:

a step forming $R_XB_YTM_Z$ alloy layer of 30 to 100 μm in thickness on a substrate by a physical deposition process;

a step of heat-treating said alloy layer to form a thick film magnetic layer having $R_2TM_{14}B$ as main phase;

a step of manufacturing thick film magnet by magnetizing said thick film magnetic layer; and

a step of building said thick film magnet into a motor,

where R is at least one selected from rare earth elements, B is boron, TM is iron or iron alloy partly substituted by cobalt, and X : 0.1 - 0.2, Y : 0.05 - 0.2 and Z = 1 – X – Y.

19. The method of claim 18, further comprising a step of laminating a plurality of said alloy layers formed on said substrate.

20. The method of claim 18, wherein said physical deposition process is a laser abrasion.

21. The method of claim 18, wherein said substrate is made of iron including at least one element selected from the group consisting of nickel, cobalt, silicon, nitrogen, and boron and having at least 13kG in saturated magnetization.

22. The method of claim 18, wherein said substrate includes tantalum on

a surface thereof.

23. The method of claim 18, wherein said substrate includes ion-implanted tantalum on a surface thereof.

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